

87-268

RECEIVED

Digital Imaging General, **DIMAGE** Inc.

...*dimage* vs. *damage*...

JUL - 2 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

COMMENTS

ON FIFTH NOTICE OF PROPOSED RULE MAKING (NPRM)

Dr. Dmitry A. Novik
Digital Imaging General,
DIMAGE Inc.
4621 Clark Pl., NW
Washington, D.C. 20007
tel: (202) 333-8956
e-mail: dnovik@CapAccess.org

July 1, 1996

Reed E. Hundt
Chairman,
James H. Quello
Commissioner,
Susan Ness
Commissioner,
Rachelle B. Chong
Commissioner,
Federal Communications
Commission

DOCKET FILE COPY ORIGINAL

Dear Chairman, dear Commissioners:

I have read carefully and fulfilled exhaustive scientific and engineering analysis to the best of my knowledge the written text of the Fifth NPRM, your separate written statements as well as Dr. J.P. Bingham's (Phillips Corp.), Mr. C. Mundie's (Microsoft Corp.), Mr. R.C. Wright's (NBS, Inc.), Mr. R.M. Stearns's (Compac Computer Corp.), Mr. J.M. Keelor's (Cosmos Broadcasting Corp.), Mr. W. Sullivan's (KPAX-TV), Mr. R. Hummell (Dreamworks) written statements at the testimony before Senate Committee on Commerce, Science, and Transportation June 20, 1996.

So, I would like and feel some professional obligation and citizen duty to share with you the main results of this analysis.

Let's ascertain, first of all, what all these written materials have in common - they all (of course, to different degree) in fact, unfortunately, have some wrong statements and propositions which are in contradictions with the scientific and engineering grounds, fundamentals of TV technology and service; secondly, they all infected by some euphoria and overexcitement about "digital revolution", "digital era" not making the difference between image quality of TV pictures depending exclusively on chosen TV format (mainly by the number of scanning lines) and the digital **tools** for

No. of Copies rec'd 029
List ABCDE

MMB

transmission (broadcasting) TV signals via radiotelecommunication channels and networks; third, they all neglect some lessons which the history of previous transition from grayscale to color TV NTSC teaches all of us and this lesson is simple - in competition between **incompatible** CBS color TV standard and **compatible** NTSC TV standard the last one was a undisputed winner.

My analysis has shown also that all honest mistakes by the authors of analyzed written materials are grounded on some lack of the whole understanding of the fundamentals of TV technology and possibilities of the NTSC standard, its TV format foremost.

Let me say very clear at this point - without absolutely clear understanding of these fundamentals of TV it is impossible and unproductive to debate any political or regulatory decision about TV technology and service, their innovations and acceptance for the public, taxpayers.

Not knowing and understanding the past of TV technology and services history, the enormous scientific and engineering efforts undertaken by our Founder Fathers of TV service in their really genius choice of NTSC TV format - the Constitution of TV over-the-air broadcasting service - which triumphed more than half of a century, it is absolutely impossible to imagine and govern TV future.

For this reason and in order to discuss the issues in definite terms, I prepare in compressed but clear and readable form and put as Appendix A such fundamentals of TV technology and service (4 pages of text, two pages of two graphs and two tables). I urge you to stop here and read this material first before you will continue to read my Comments next.

In Fifth NPRM you are asking for comments about some list of questions and issues arising as the result of your proposal to adapt ATSC standard and require its use. Let's separate them, in order to comment them, on primary, main issue - it is if to adapt ATSC standard instead existing and ruling NTSC standard; and all secondary issues - if to adapt then in what manner to require its use.

So, if to focus on the forest instead the trees the final result of my comments is as simple as the truth is:

- for the sake of the support and protection of the free over-the-air TV broadcasting service, economical and social well being of the nation today and years to come - to reject **all** proposed measures which are **not compatible with NTSC TV format** (the Constitution of TV public service) like:

- ATSC standard (Grand Alliance and NBA);
- transition to progressive scanning (CICATS);
- transition to the aspect ratio 2:1 (Dreamworks);
- transition to the transmission rate more than 70 TV frames per second (Apple Computer, Inc.).

Let's explain the reasoning, the timing, and the necessity of this conclusion:

- approval by FCC the ATSC standard from Grand Alliance instead to confirm the current NTSC will be the Grand Mistake, it will at least:

- destroy the public free over-the-air TV broadcasting in the United States by:
- putting the unaffordable for taxpayers and nation in the whole the financial burden to spent no less than 500 billions of 1996 dollars to buy new ATSC TV sets, VCR, commcorders, more than 50 billions 1996 dollars to equip ATSC TV stations (for sure, it is quite impossible for many TV stations serving rural areas to be able to afford to invest no less than 15 millions of dollars per station);
- hanging up a sword of Damocles over the maintenance and high operational support for NTSC TV stations by business reasonable switch the investment money for ATSC TV stations;
- put additional essential burden on the US budget by eliminating from the auction the radio frequency spectrum slots occupied by ATSC TV stations and service, and pushing US Government to buy new ATSC TV station equipment and ATSC TV sets, VCR to support necessary TV activities of its Departments and Agencies;
- isolate United States on the international TV market;
- prevent any innovations (digital including) at their earliest (R&D) stages in TV technology and services compatible with NTSC standard and using its features.

If, nevertheless, any company from Grand Alliance or other enterprises believe that the customers will prefer their design of their new telecommunication services and products for over-the-air broadcasting they are free to compete and risk on the telecommunication market buying necessary licenses on radio frequency spectrum auction and appeal directly to their potential customers.

I would like to convey to you my professional knowledge and experience from 1995 in TV technology and digital imaging (TV) technology too that in contrast to the expression of some of the witnesses at the Senate hearing and Chairman R.Hundt view that we need free broadcast television from "the straightjacket of analog (NTSC - D.N.) technology", NTSC TV format has a lot of room for TV innovations in its standard borders - the same as US Constitution has by reasonable, affordable and needed amendments to the Constitution without destroying it, - for TV NTSC Constitution the technological amendments mean their **compatibility** with NTSC TV format. I personally was lucky to invent some new **digital** TV technologies and services **compatible** with NTSC standard and definitely they are not the first and the last in the waiting list.

I will be dishonest if I will be silent reading the statement on the page 1 Summary of the testimony of Dr. J.P.Bingham as the representative of the Grand Alliance that the Grand Alliance system will "facilitate important spin-off applications such as new breast cancer detection techniques and innovative, interactive educational tools" - two very politically and socially sensitive problems. I put for the record here with all responsibilities behind this that the statement and promise to public from Grand Alliance is absolutely false, even more than this - indirectly, by drawing off a huge of money from the nation budget to facilitate ATSC standard, it will left little money to fight against cancer, breast cancer

particularly, and to improve education.

I would like also to share with you putting in public domain some of my letters and papers sent to Administration concerning TV technology and services issues. This material is packed in Appendix B.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dmitry Novik', with a stylized flourish at the end.

Dmitry A. Novik

particularly, and to improve education.

I would like also to share with you putting in public domain some of my letters and papers sent to Administration concerning TV technology and services issues. This material is packed in Appendix B.

Sincerely,

Dmitry A. Novik

APPENDIX A

Dr. Dmitry A. Novik©
DIMAGE Inc.

Let's remind the **fundamentals** of **TeleVision(TV)** - without absolutely clear understanding of these **fundamentals** of TV it is absolutely impossible and unproductive to debate any political or regulatory decision about TV technology and service, their innovations and acceptance for the public, taxpayers.

Let's start from the formulation of the final goal for TV - this goal is to create on the screen of the TV receiver-set the visual picture of any remote, not seeing directly by eyes-vision of an observer, object which is an absolute twin-picture of the same object which is in the field of view of TV camera and the observer would be able to see by his/her eyes directly without TV if he/she will be in the place of TV camera is. The TV providing such absolute illusion of the direct eyes-vision may be named as an **'ideal'** TV. It's evident that the picture of such **'ideal'** TV needs to be utmost clear (spatially sharp), color, and stereoscopic. The **evolution** of the TV technology for a broadcasting use is an way to reach this **'ideal'** TV.

TV is based on the set of four main imagery data (energy) procedures:

- 1) transformation of the light energy of the optical image to the energy of the according electrical signal - TV signal;
- 2) control by this TV signal of the electromagnetic waves of the transmitter station;
- 3) the reverse transformation by the TV receiver of the energy of the electromagnetic waves radiated by transmitter in the energy of TV signal;
- 4) the reverse transformation of the TV signal to the light energy of the according visual picture.

At the time when the first TV standard for black-and-white (noncolor) was established it was not other way to implement the procedures 2) and 3) other than by **radio** delivery, radio telecommunication (later on came cable distribution and direct satellite broadcasting). Such radio telecommunication media requests the implementation of the first procedure by the **scanning** of **2D** optical image into according **one dimensional** TV signal. It was the reason to establish the **standard** parameters, **format** of this scanning.

There are four main scanning parameters: the number of scanning lines **z**; the order of scanning (progressive [**P**] or interlaced [**I**]); the number of pictures (TV frames) per second **f**; and a picture aspect ratio $K=b/h$, where **b** - is the width of the rectangular picture and **h** is the height of that picture.

These four main scanning parameters are crucial ruling image parameters of TV and their choice for **TV standard** is dictated by the necessary **compromise** between the fundamental features of **human vision**, the well understandable desire to have an **'ideal'** TV, and the **price** which society and customers-taxpayers-viewers are ready to pay for TV service.

Let's emphasize that the first NTSC (like European) TV standard for black-and-white (grayscale, noncolor) TV was the result of

previous enormous scientific research and engineering creativities of our Founder Fathers of TV service. As the result - the really genius NTSC standard is our **TV Constitution, the Constitution of the free broadcasting TV service.**

The numbers of NTSC standard $z=525$; $f=60$ pictures per second; the picture aspect ratio $K=b/h=4:3$; Intelaced scanning order are not some holy or accidental numbers and scanning order - this genius choice was done by our predecessors Founder Fathers of TV service and successively triumphed already by more than half century of the practical implementation.

Let's examine the scientific and engineering grounds of this genius choice.

The number of scanning lines per picture $z=525$. The most desirable number $z_{id.tv}$ has to be so big that viewer is able spatially to resolve the smallest image details which are determined by the **threshold** of human viewer spatial(angle) resolution power. The Fig.1 illustrates the main relations between $z_{id.tv}$, width b and height h of the picture, the distance of the viewing L and the angle resolution power of human vision γ . It is evident that for the comfortable viewing of TV picture there is some relation between h and L . Cinema experience speaks that the best value of L has to be **3-5 times more** than h (in contrast to cinema theater we don't need buy the tickets for our home TV theater - we don't need to compromise between the best seats and their price, we always have the best seats).

By the way, in the relation between b and h it is the essential **difference** for **TV or computer** screen viewing reflecting the different function and goal of TV and computers. And this difference is forever. TV is mainly for entertainment, rest, computers - for job. The best relation between L and h for computers - $L \sim h$.

It is simple to find (see diagram 1) that

$$z_{id.tv} = \frac{2b}{LK\gamma}$$

The value γ may be calculated as the diffraction threshold of the human vision spatial(angle) resolution power on the base of the diameter of the pupil of the eye and the wavelength of the light radiation. It gives the value $\gamma \approx 1'$ (the same value may be derived from the distance between neighboring cones of the eye retina). Such value $\gamma \approx 1'$ corresponds to the best optical condition for viewing and to the so called "yellow" spot of retina - the part of retina with the sharpest vision.

The angle dimension of the "yellow" spot is 8° in the horizontal direction and 6° in vertical direction - it's the physiological ground for selection of the aspect ratio $K=b/h=4:3$.

The experience shows that the optical conditions of viewing of the TV picture is not ideal optical condition when $\gamma \approx 1'$, therefore, for TV it's more suitable to select $\gamma_{tv} \approx 2'$.

So, if to choose $\gamma_{tv} \approx 2'$ and $h/L=1/3$ then the maximal desirable and sufficient number of the scanning lines is $z_{id.tv}=850$. Let's emphasize that for the computers at least $z_{id.comp.} = 3z_{id.tv}=2550$ because for computers $h/L=1$.

The real choice of the number of scanning lines $z \leq z_{id.tv}$ for TV standard is dictated by the compromise between the clearness

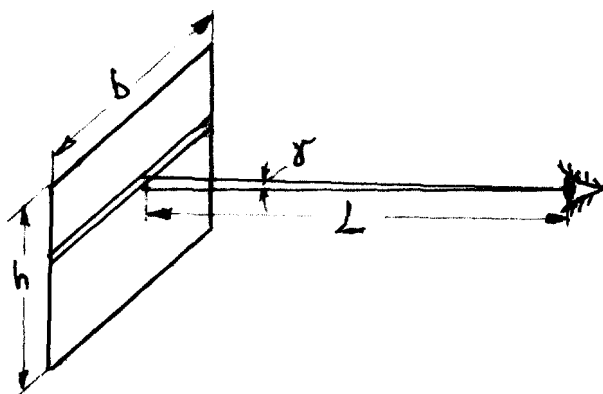


Fig. 1

(spatial sharpness) G of the TV picture determined by the selected number z and according value of the bandwidth W needed to be allocated to transmit TV signal for such value z . It's well known that

$$W = \frac{Kz^2 f}{2} = k_1 z^2 = k_2 f = k_3 K.$$

So, the compromise between W and z means that the choice of the **sufficient** number of the scanning lines $z < z_{id.tv}$ does provide according desirable and affordable visual clearness G of the TV picture. It is clear that the increasing of the value z will lead to the increasing of the clearness G of the TV picture but the point is that the dependence between selected value $z < z_{id.tv}$ and according value of G is **not direct** proportional dependance but rather **relative** proportional dependance - it is consequence of the very general psychophysiological Weber-Fekhner law which states that the perception for the increase of the stimulus is proportional to the relation of the amount of the increasing of the stimulus relatively to the existing stimulus. It means that the increasing of the number of scanning lines Δz will lead to increasing of the visual perception of the clearness increasing ΔG as

$$\Delta G = a \frac{\Delta z}{z} \quad \text{and therefore} \quad G = a \ln z + C$$

where a and C are some constants. If to put $G_{max}=1(100\%)$ for $z=z_{id.tv}$ and $G_{min}=0$ for $z=1$, then $a=1$, $C=0$ and

$$G = \frac{\ln z}{\ln z_{id.tv}}.$$

It means finally that the clearness G rises with the increasing of the number of the scanning lines z rapidly when this number z is small and then the rise of the clearness G is slow down when the relation $z/z_{id.tv}$ arises. The tables and graph on Fig.2 visually illustrates this dependence $G(z/z_{id.tv})$ for two values of $\gamma \approx 1'$ and $\gamma_{tv} \approx 2'$. It illustrates, particularly, the genius choice of $z=525$ for NTSC as the compromise between very slow rise of the ΔG and constant very rapid rise of necessary bandwidth $\Delta W = k_1 z^2$ under increasing Δz when $z \geq 0.5 z_{id.tv}$. For example, if to increase the value z from $z=525$ to $z=720$ then it will give only $\approx 5\%$ increase in clearness G and $\approx 90\%$ increasing of the necessary bandwidth W ! Accordingly the increase from $z=525$ to $z=1080$ will provides only $\approx 12\%$ increase in clearness G and $\approx 500\%$ increasing of the necessary bandwidth W !!!

Now, let's remind the scientific ground for the value for the number of pictures per second $f=60$ - NTSC's choice, and its choice of interlacing scanning order. As it is well known from the cinema practice, in order to reproduce of the unbroken movements of image objects it is necessary to have no smaller than $f_d=24$ frames per second. From another side it is also well known, that in order to support visually unflashing perception of the flashing visualization of the cinema frames or TV pictures this number of pictures (frames) per second needs to be **twice** as high as the

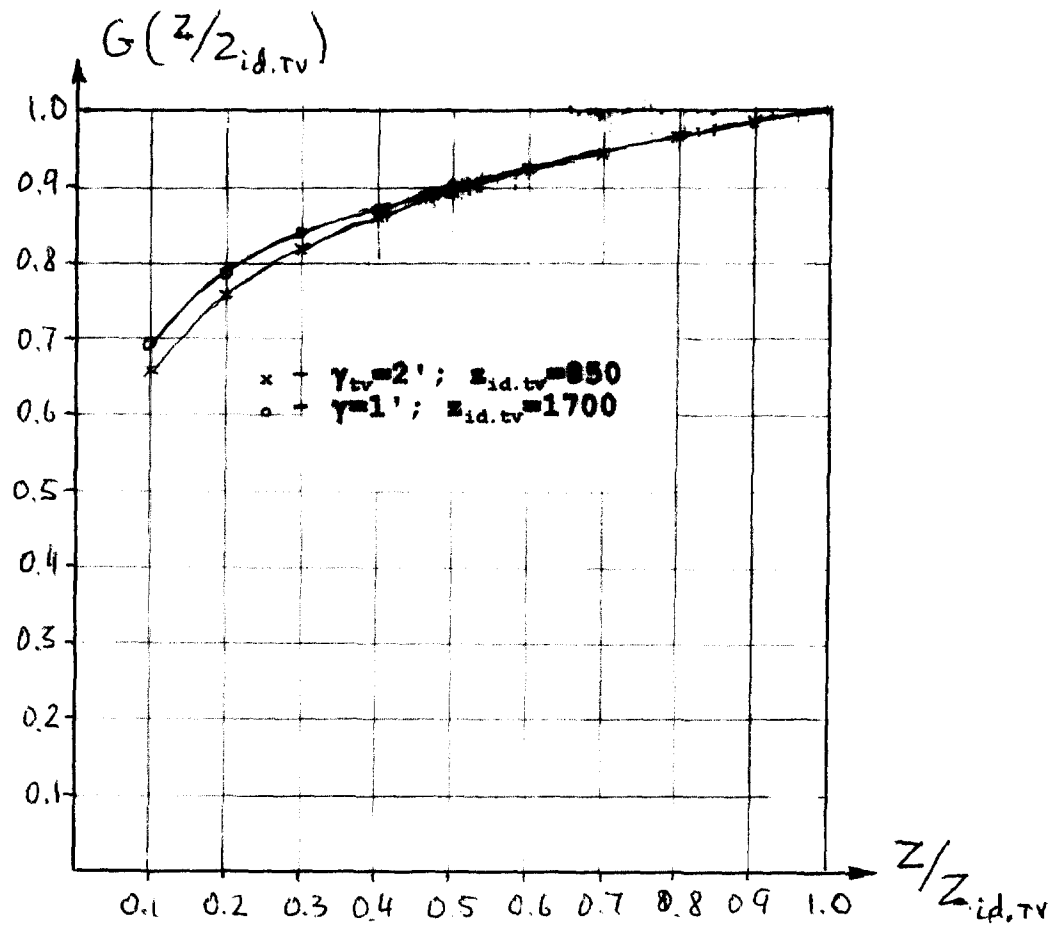


Table 1: $\gamma_{tv}=2'$; $z_{id.tv}=850$;

$\frac{z}{z_{id.tv}}$	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
z	85	170	255	340	425	510	595	680	765
G	.658	.76	.821	.864	.897	.924	.947	.966	.984

Table 2: $\gamma_{tv}=1'$; $z_{id.tv}=1700$;

$\frac{z}{z_{id.tv}}$	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
z	170	340	510	680	850	1020	1190	1360	1530
G	.69	.783	.838	.876	.906	.931	.952	.97	.985

Fig. 2

requests for the reproduction of the unbroken movements - it means it is necessary to have $f_{fl} \geq 48$ frames per second on cinema (TV) screen ($f_{fl} \geq 2f_d$). In order to prevent such duplication of the necessary frames on the film the cinema screen is lighting **twice** the same frame providing therefore the necessary $f_{fl} \geq 2f_d$. In TV such duplication is achieved by **interlacing** scanning order when each whole TV frame with z scanning lines and frequency f_d TV frames per second consists of the **two interlaced TV fields** each with $z/2$ scanning lines and frequency $2f_d$ TV fields per second. Such interlacing scanning principle compresses by half the necessary bandwidth W ! The interlacing scanning principle explains why the number of the scanning lines per TV frame z must to be an **odd** number.

The frequency $2f_d = 60$ Hz (accordingly 50 Hz in Europe) was chosen in the first TV standard as the frequency of the electric power supply in order to prevent the visual sweeping of the electric power supply background at TV screen.

These are the **fundamentals** of TV technology and service, the scientific and engineering grounds for **genius NTSC standard - our TV Constitution** - given to us by Founder Fathers of TV service.

APPENDIX B:

1. the letter to President B.Clinton (1 page);
2. the letter to Associate Director for Technology, Executive Office of the President, Office of Science and Technology Policy Dr. L.S.Johns (3 pages);
3. the letter to FCC Chairman R.Hundt (2 pages);
4. the letter to FCC Chairman R.Hundt (3 pages);
5. the letter to the Editor The Washington Post (1 page);
6. the paper "Is it really the god deed?" (2 pages);
7. the letter to Senator J.McCain (1 page);
8. the paper "Stereo images data compression and digital stereo compatible TV" (9 pages);
9. the paper "Video Publication Service - A New Interactive TV public service [TV (video) Publishing House, TV Public Library, Personal TV (video) Book] (7 pages).

Copy

September 12, 1995

Mr. Bill CLINTON
President of the United States of America
White House
1600 Pennsylvania Avenue, NW
Washington, D.C.

Dear Mr. President:

Please, would you give short attention to my White Paper "*Digital Stereo Compatible TV (DSC TV) - the future TV standard*" attached to this letter.

It is no doubt that TV is the most important and influential technological innovation of this century which has changed the whole public, economical, and political life of this century and forever.

The TV history knows only two turning-points, two TV Standards - the first in the prewar time for the black-and-white (grayscale) TV and the second NTSC TV Standard in the afterwar time for the color TV.

On the crossroad of centuries TV is also on the crossroad to a new TV Standard, TV Standard for XXI century adding to color TV a new dimension - 3D visualization, stereo TV.

I was lucky to find such a new dimension for TV technology and attached White Paper initially describes this invention for which I will not apply for a patent.

Please, make an honor to accept this invention as my debt of gratitude too great to repaid to America, its people, government at the most remarkable day for my wife and me when we have been sworn to be the new citizens united with the citizens of the United States of America.

The Government of the USA is absolutely free to use, implement, and exploit this invention hopefully for the prosperity and technological leadership of the USA. I will be blessed to participate to make such hope as a reality. Believe me, I will be fully cooperative in all efforts which will be selected as appropriate for success by according Agency of the Government of the USA.

With best wishes for success in your leadership, I'm

Sincerely yours,

Dmitry A. Novik

Copy

Dr. Dmitry A. Novik
4621 Clark Pl., NW
Washington, D.C. 20007
tel: (202)-333-8956

April 7, 1996

Mr. Lionel S. Johns
Associate Director for Technology
Executive Office of the President
Office of Science and Technology Policy
Washington, D.C. 20500

Dear Mr. Lionel S. Johns:

Beforehand thanks for your warm and respectful letter addressed to me January 18, 1996 with thankful appreciation of my intent to donate to the United States two of my innovative TV technologies which I was lucky to invent, and your expression of the warmest welcome to me and my wife to the United States. My wife and me really highly appreciate your such kind and generous expression.

In the same letter you informed me, Dr. Laura Philips, and Dr. Richard Smith (FCC) that you are forwarding my two White Papers "Digital Stereo Compatible TV (DSC TV) - the Future TV Standard" (7 pages) and "Video publication Service - A New Interactive TV Public Service" (7 pages) to Dr. Richard Smith at the Federal Communication Commission (FCC) "where he will examine them in greater detail. I am sure that he will be able to determine if the government has an appropriate role for your invention." and that in the time when television technology is undergoing dramatic changes "the FCC will be best able to understand and evaluate the potential contribution of your new TV technology".

I was then and still now completely agree with your well-grounded suggestions that FCC not only will be best able but has to be able to **understand** and **evaluate in greater detail** the potential contribution of my new TV technologies, and as the result of such understanding and evaluation will be able to **determine** if the government has an appropriate role for my inventions.

Unfortunately, the reality has become in a sharp contrast with your and my well-grounded suggestions and expectations.

It is the chronology of events after I and Dr. Smith have received your letter. Next day I received your letter I called to Dr. Smith. Ten days later Dr. Smith call me back. After short phone conversation Dr. Smith came to conclusion that we have to meet for detailed discussion later on and his secretary will inform me about the date of our meeting. His secretary informed me in advance that the meeting will be held in his office at FCC February 27, 1996 at 2:00 p.m. for one hour long meeting. There were at this meeting Dr. Smith and his two assistants Mr. Franca and Mr. Stillwell.

Dr. Smith and Mr. Franca said that they have not chance to read carefully my papers and, therefore, asked to give them some lecture on the subjects of my White Paper concerning the Digital Stereo

Compatible TV as the future TV standard. I gave such lecture on this subject for a half an hour. The next half an hour was spent in the constructive manner for answering on some reasonable and well motivated questions from Dr. Smith like how long it will take to develop the prototype for demonstration and which professional skills and funding are necessary for such development, the questions and answers about my professional profile, some general discussion on the history of TV technology, the proposal from the Grand Alliance of the HDTV standard with connection of my proposal.

As the result of this meeting Dr. Smith said that my papers need to be analyzed by his engineering staff more carefully, it will take additional two weeks and after such analysis will be completed we have to meet for another meeting. In order to help such analysis I gave to Mr. Franca additionally to my White Paper "Digital Stereo Compatible TV (DSC TV) - the Future TV Standard" (7 pages) my more detailed paper "Image (Video) Data Compression Technology for the Reduction of the Stereo redundancy and its Application for the Stereo Digital Images (Video) Acquisition, Recording, Transmission, and Visualization" (9 pages) and ensured Dr. Smith that he and his engineering staff feel free to call me anytime, day or night, with any questions on the subject and I am obliged to answer completely on these possible questions.

March 12, not having any calls from FCC staff at all, I called to Dr. Smith. He was out of country, so I called to Mr. Branca. Mr. Branca was not able to say me anything meaningful at all - he did not read carefully my paper and his engineering staff too, therefore, they had not any engineering questions. Next day I received a call from Mr. Bromery (FCC) with invitation to come to his office March 14 at 3:00 p.m. for a meeting. There were at this meeting Mr. Bromery and Mr. Pezak from FCC. Both of them did not read carefully my papers, so they asked again to repeat some lecture on the subject of my paper concerning stereo TV. No any questions were followed from Mr. Bromery and Mr. Pezak, they openly expressed no intention to go in any engineering details or analysis giving instead me some lecture on the legal order of the consideration of new standards. This meeting was absolutely unproductive from FCC and fully demonstrated that they (Mr. Bromery and Mr. Pezak) are just quite capable to lay away any engineering discussion on the engineering essence of the subject by purely bureaucratic unproductive cover up. Meeting was ended without any promising for follow up meeting in FCC. My follow up March 16 call to Mr. Branca did not help either.

So, I called again to Dr. Smith. He called me back March 20. I explained to him my impression of the unproductive meeting March 14 with his staff. Dr. Smith apologized and said that I need to understand some psychological barriers from his staff having spent more than 8 years on promotion of the HDTV standard, and a lot of money (\approx 500 millions \$), investments involved and spent to prepare this standard. But he ensured me that, nevertheless, his staff will make the detailed engineering analysis of my papers and asked me keep in touch. I again expressed to Dr. Smith my thorough devotion to help to speed up this analysis proposing my readiness to give

some lectures, seminars to his engineering staff on the subject, repeated my obligation to answer on all engineering questions from anyone from FCC either by telephone or in the direct meetings.

Finally, not having any calls from FCC staff I called again to Dr. Smith. He called me back April 2. At this time Dr. Smith changed his mind - neither he nor anyone from his engineering staff has not any obligation to consider or analyze my papers, his previous intention to do it is no more than some courtesy to you personally as to the person signed the letter January 18, 1996 to me and to him. Nothing more. Period. I expressed to Dr. Smith my complete dissatisfaction with such Dr. Smith understanding of his professional, governmental duties as the Chief of the Office of Engineering and Technology of the FCC under your direct appeal from the Office of Science and Technology Policy of the Executive Office of the President, and said that he, therefore, push me to call you directly. I did it many times after this, left messages through your secretary, but the silent is as the response.

It is the reason why I decided finally to write this letter to you and send copy to Dr. Smith - by the way, it is necessary to have the record of this terrible saga started from my initial letter to the President of the United States of America dated September 12, 1995. I hope that my current letter will be answered in the constructive manner and I will be not obliged to complain or protest to anyone else.

Let's put for a direct record here - I salute professionally to many of the professional efforts from Grand Alliance, but in the same time my well professionally and historically grounded prediction is that the american people, customers will vote by their valets to reject the **incompatible** HDTV standard, that the endorsement and approval of the HDTV standard will be the Grand Mistake in the technology policy.

As one Russian proverb says - "it is impossible to be sweet forcefully", and it is really true. But I am also convinced, it is also true that the problems and issues of the technology policy, TV technologies and innovations, particularly, are clearly far beyond simply some courtesy, favor or sweetness, some personal relations.

Thanks for your time and consideration. I hope to read or to hear from you very soon.

Sincerely, I'm

Dmitry A. Novik

cc: Dr. Richard M. Smith

Copy

Dr. Dmitry A. Novik
4621 Clark Pl., NW
Washington, D.C. 20007
tel: (202)-333-8956

April 9, 1996

Reed Hundt
Chairman
Federal Communications Commission
1919 M Street, NW
Washington, D.C. 20554

Dear Chairman:

Beforehand thanks for your personal reading of this letter.

I was advised to appeal to you directly by Dr. Lionel S. John, Associate Director for Technology and Mr. John Foster, general counsel of the Office of Science and Technology Policy of the Executive Office of the President as the result of their consideration of my letter to Dr. Lionel S. John from April 7, 1996 (I attached the copy of this letter).

It's the story.

I was lucky to invent a new TV technology, the *Digital Stereo Compatible TV (DSC TV)*, and for some well grounded and motivated reasons I decided not to apply for the patent but rather to donate this innovative TV technology to the United States. The letter with such decision accompanied by White Paper "*Digital Stereo Compatible TV (DSC TV) - the Future TV Standard*" (7 pages), initially describing this new TV technology, I sent September 12, 1995 to the President of the United States of America (I attached this letter to the President).

Erroneously this letter and accompanied White Paper were forwarded to the Office of the Commissioner of Patents and Trademarks for reply. In the letter signed by the Assistant Secretary of Commerce and Commissioner of Patents and Trademarks Mr. Bruce A. Lehman October 27, 1995 Mr. Bruce A. Lehman informed me, particularly, that "each Federal or state department or agency is responsible for deciding whether or not it has any interest in ideas or inventions that might be useful in carrying out its mission".

Because a new Digital Stereo **Compatible** TV may be considered as the alternative to the **Incompatible** HDTV, and because such incompatible HDTV was intensively debated as the issue of technology policy, as the future USA TV Standard I decided to contact the Office of Science and Technology Policy of the Executive Office of the President. In my conversation with Dr. Laura Philips from this Office November 3, 1995 Dr. Philips confirmed that my letter to the President was erroneously forwarded to the Patent and Trademarks Office, and that after review of my materials in the Office of Science and Technology Policy these

material will be forwarded to your FCC. At this point time I conveyed to Dr. Philips my second White Paper "Video publication Service - A New Interactive TV Public Service" (7 pages) initially describing an innovative TV technology and service.

Finally, I received the letter signed January 18, 1996 by Associate Director for Technology from the Office of Science and Technology Policy Dr. Lionel S. Johns in which he informed me, particularly, that "I am forwarding your White Papers on to Dr. Richard Smith at the FCC where he will examine them in greater detail. I am sure that he will be able to determine if the government has an appropriate role for your invention. As you know, television technology is undergoing dramatic changes and the FCC will be best able to understand and evaluate the potential contribution of your new TV technology."

Then I contacted and met with Dr. Richard Smith. The promising first meeting February 27, 1996, unfortunately, later on was transformed to some gridlock. The whole set of events starting from the first meeting with Dr. Richard Smith is described in my letter to Dr. Lionel S. Johns from April 7, 1996 (I attached the copy of this letter).

It is not any doubt in my mind that you will be able to brake this gridlock.

I would like to note also that, as you well know, eight major computer and software companies voiced publicly their strong opposition to the proposed digital HDTV system on the base of its incompatibility. My **digital compatible stereo TV** system adds to this debate beyond simply opposition to the **digital incompatible HDTV** the constructive alternative for serious consideration. I wish to think that such consideration will take place - it is never to late to consider the constructive alternative to avoid wrong decision.

With the best wishes for your leadership, I'm

Sincerely,

Dmitry A. Novik

Copy

Dr. Dmitry A. Novik
4621 Clark Pl., NW
Washington, D.C. 20007
tel: (202)-333-8956
dnovik@CapAccess.org

May 24, 1996

Reed Hundt
Chairman
Federal Communications Commission
1919 M Street, NW
Washington, D.C. 20554

PERSONALLY TO THE CHAIRMAN R.HUNT DESK AND ATTENTION

Dear Mr Hundt:

Beforehand thanks for your personal reading of this personal letter.

There are three main reasons to write this personal letter to you.

Number one, meeting you yesterday at National Press Club where you delivered such impressive luncheon followed speech-address to the Symposium "New Media, Old Media and the Future of Campaign Television: What Next on the Free Air Time Issue?", I tried to give to you the copy of my fax (6 pages) to you faxed April 9, 1996 and the copy of the letter to the Editor of The Washington Post (1 page) accompanied by my paper **"Is it really the good deed?"** (two pages) as the reaction of publishing in The Washington Post, Friday, March 1, 1996 the editorial **"Mr. Murdoch's Good Deed"**. You asked to give this material to your assistant Mike (if I remember his name correctly). After your speech I talk to Mike urging him to brief you personally. Instead Mike said to me that he will convey my material to appropriate people of your staff but will not brief you personally. Therefore, I wrote this letter in such manner that only you personally but anyone else can read and react on my letter properly.

Number two, after your outstanding speech I tried to ask the question for you. I was the first rising my hand for questioning but, unfortunately, the "fighter" for free speech Mr. Sanford J.Lingar loudly rejected my right to pronounce my question. Mr.Lingar does not understand that the right for free speech foremostly means the right for free questioning too. Mr.Lingar's public behavior on this occasion reminded me, unfortunately, the so called "free" public discussions and "open" trials in the former USSR. As genius russian poet Vladimir Visotsky wrote in his poem "My Humlet" (1972):
"But we are still assigning tricky answer,
And can not find at least the needed question".

So, my question was and still is - did FCC has a majority among your colleges, commissioners for approval HDTV Standard?

Number three at last, but not at least, the reason to write this personal letter to you is the essence of your speech delivered at National Press Club May 23, 1996. Let's say first of all one more time how much I was impressed by remarkably excellent style of your speech, so magnificently linguistically and culturally articulated by citing Don Kichot and Dalucinea, Maria Antuanietta and Founders - to name a few. But I can not agree with the essence of your speech mainly with your exciting and endorsement together of the coming HDTV Standard, the so called free air time on commercial TV networks for political election campaign and education.

Let's separate different issues to be more accurate and precisely in our analysis.

First, the coming **digital** TV broadcasting associated with the HDTV Standard submitted to FCC approval by Grand Alliance. You said literally this: "If you ask me what compression (technology - D.N.) is - I don't know, but I know that compression in digital TV broadcasting will provide 5 more digital TV programs in the same channel capacity instead only 1 analogue TV program". I don't know who inspired you to belief that this excitement about 5 more TV programs is true, but I as a professional insist that this your expectation and statement are false. I need to say, that I devoted practically the whole my professional life starting from 1955 to the science and engineering in the data compression, particularly and mainly, in image (video) data compression field, my PhD thesis (1961) in this area, I published the first monograph "Efficient Coding" (1965), designed and demonstrated the first prototype of the digital TV system with data compression for space application in 1960, have a lot of patents (USSR) and even one in USA for image (video) data compression technique and systems. This letter is not the place to put the necessary scientific arguments and proof of my statement, but I'm ready any time to do it privetely or publicly at your presence.

What is possible to discuss in this letter is that in your speech and mind you emphasize the **digital** nature of HDTV Standard but did not mention that this HDTV Standard is **incompatible** with existing NTSC (PAL, SECAM) Standard and this feature of HDTV is the reason for the death verdict for the approval of this new TV standard by customers, market, times and years to come. All necessary arguments and alternative to HDTV - the digital compatible stereo TV, you can find in my fax to you April 9, 1996 and all accompanied materials which FCC has (you can ask Dr. R.Smith).

Now, about the so called free air time on commercial TV networks. The free air time on commercial TV networks is nonsense, like "fried ice". There is not free lunch (the luncheon at National Press Club was also not free - it was provided by TCI and they completely commercially successfully exploited this event), there

is not any free from payment millisecond of TV programming-broadcasting at any TV network, especially and foremost commercial TV network. You know, sometime an anecdote makes more sense than one hour long lecture. It's the anecdote from former USSR time: "Comrade Ivanov came to office in the morning in very bad shape - unshaved, with severely wrinkled pants. His colleges asked him - what's happen, do you have an iron, electrical shaver at home? Yes, I have, answered comrade Ivanov. Then what - asked they. You know, said Ivanov, I came yesterday evening at home very tired. So, first I plugged in TV set - Brejnev speaks from the screen. Ah!, then I switched to radio set - Brejnev speaks from radio speakers. So I decided not to plug in either iron or elecrical shaver. Why to waste more time!"

The idea promoted by Paul Tailor and his supporters will make American nation (half of them at least) on the eve of November election looks like Ivanov from this anecdote, makes Clinton and Dole as Figaro one evening here for 2-5 minutes, next evening there, like Payacco from circus - if TV networks were able to transform O.J. trial to giant most profitable show-entertainment then why not to try to do the same with election campaign. It would be very funny if it was not so sad...

It does not mean at all that there is not alternative, there is not any innovative way to use TV for election campaign success, for better. Please, read my letter to the Editor of The Washington Post and my article **"Is it really the good deed?"**. May be it is a solution?

Now, TV and education - you are among the best articulated supporters, as it is well known, of using TV, TV broadcasting particularly for education. And it is good, magnificent! The only problem (may be some more behind the horizon) is that existing TV technology does not support interactive reading of the text and visual analysis of still pictures from TV screen. I ask to read my White Paper **"Video publication Service - A New Interactive TV Public Service"** (7 pages) (Dr. R.Smith have this paper too). May be it is a solution for proliferation of the TV technology for education, professional training, ...?

With the best wishes for your leadership, I'm

Sincerely,

Dmitry A. Novik

Copy

Dr. Dmitry A. Novik
4621 Clark Pl., NW
Washington, D.C. 20007
tel.: (202) 333-8956
e-mail: dnovik@CapAccess.org

March 3, 1996

The Editor
The Washington Post
1150 15th St., NW
Washington, D.C. 20071

Dear Editor:

Please, would you give an attention to read and decide to publish my **"Is it really the good deed?"** (two pages) attached to this letter as the reaction of publishing in The Washington Post, Friday, March 1, 1996 the editorial **"Mr. Murdoch's Good Deed"**.

I hope that your respectful newspaper proclaiming itself as an independent newspaper will be open to publish one more independent thought even it is opposite to your opinion about so important issue as how to use the powerful TV broadcasting for the profit and justice of the American democracy, its free national elections.

I hope that not only you but your readers too will be able to see that my opinion and constructive proposal is nonpartisan, nonracial, nondiscriminatory to anyone, the debates of such alternative will be profitable for American people, for democracy flourishing.

Sincerely,

Dmitry A. Novik

Is it really the good deed?

In its editorial "**Mr. Murdoch's Good Deed**" (Friday, March 1, 1996) The Washington Post enthusiastically endorsed Mr. Rupert Murdoch's present to give an hour of free air time to the major party presidential candidates this fall by his television network and challenging the other networks to provide candidates with extra free time.

But is it really a good deed independent who pioneered it and who endorsed it? Unfortunately, not at all. Quite opposite. It is the absolute wrong imitation of the solution, even as a partial solution, of the crucial national problem of the financing of the presidential races.

Why so? If it's true that there is not free lunch, then it is definitely true that there is not any free second of broadcasting, TV broadcasting especially, if to count the very high real price of TV broadcasting. The whole question is who paid for this "free" broadcasting and who lose and who profit from this "free" broadcasting.

So, who is a loser and who is a winner in this race of "free" broadcasting? The American electorate, American democracy will be the loser and additional profit from the final stage of the pre-election campaign will go to owners of commercial TV networks presenting for "free" an air broadcasting time by their commercial TV networks.

As The Washington Post naively suggested "we can't see any objection to their selling commercial time at the beginning and end of such broadcasts, which might cover all or at least some of their (networks - D.N) losses".

It's exactly the point where I and hopefully public also see the wrong and danger deed. Why commercial networks are not able by commercials in the beginnings and ends of such broadcasts not to lose money but make money? Are their owners and managers some idealistic devoted philanthropists but not seeking financial profit and prosperity for their commercial companies? Or commercial TV networks will transform voluntarily themselves to the status of the nonprofit organizations for the time of these broadcasts? More than naive to believe. Quite opposite - such suggestion of fusing "free" broadcasts by frame of commercials will pump more influence of money in election campaign if commercial TV networks will transform the final pre-election campaign into a new hot commodities market to buy, sell and resell. Money do not smell, right? But pre-election campaign framed by this "free" broadcasts will publically smell very badly, it is able to make more harm to election campaign for really free democratic election than good.

So, what to do? Or nothing, leave as it is. It is also definitely wrong. Fortunately, solution is really in air, it is in the nature of the public ownership of national radio spectrum for air broadcasting, and, therefore, the solution is in the air time of **public broadcasting**. It's the **solution**.

It's the natural political beauty of the radio spectrum for TV broadcasting, particularly, as the media owned by nation, its taxpayers in comparison to other media like paper publishing or cable (telephone wire) TV which do suggest the property rights to

private commercial for profit enterprises which designed, developed and are maintaining such media tools.

Let's oust commercial TV networks completely from preelection and election events on-line broadcasting as only these events federally supported and financed by some portion from taxpayers money, and mandatory give equal prescribed primetime on public TV for the major party presidential candidates this fall and forever, give **public TV** broadcasting the **exclusive** rights to on-line broadcasting of all final preelection and election events by the local and national network of PBS TV stations.

More than this, if commercial TV networks would like to give analysis and comments of these events **after** they have been happen and on-line broadcasted by TV public broadcasting network, and major commercial TV networks undoubtedly would like to make such off-line analysis and comments on preelection and election events, then those commercial TV networks needs to pay lisencc fee to unique nonprofit broadcast organization CPB - Corporation for Public Broadcasting - for the rebroadcasting, or cable channel, satellite distribution of any fragments of recorded by PBS stations of CPB's alive, on-line broadcasting of these preelection and election events. These money paid to CPB needs to go for financial support of the programming and broadcasting activities of the network of local PBS stations nationwide. By the way it will free PBS local stations from bagging the money to support their activity which is so vital for public prosperity, prosperity of democracy, will ensure financial solvency of public broadcasting forever until the democratic nature of the USA will held free elections prescribed by the Constitution of the USA.

It is a room of time to prepare and manage to make it real. The Federal Election Commission needs to be proud to make such public service to American electorate, American citizen, the spirit and letters of the Constitution of the USA.

The freedom, the privelege to live in the free democratic society which garantees really free from anyone but taxpayers money influence elections is priceless.

Dmitry A. Novik
Washington, D.C.

Copy

Dr. Dmitry A. Novik
DIMAGE, Inc.
4621 Clark Pl., NW
Washington, D.C. 20007
tel: (202) 333-8956
e-mail: dnovik@CapAccess.org

June 26, 17, 1996

John McCain
United States Senator

Dear Senator:

Beforehand thanks for your personal reading my personal letter to you.

I was yesterday among those of us who was able to hear your testimony-hearing before FCC commissioners on Free TV Time theme. I also read carefully your written statement at this hearing. In your statement you inform that you and Senator Bill Bradley sent the letters to Clinton and Dole campaign urging them publicly to endorse the plan from Free Time Coalition and that Dole campaign already agree to do so.

Unfortunately, the panelists to the hearing was selected in such manner that there was not among them anyone who think that such endorsement of Paul Taylor variant of the free of charge TV 5 min. slots time on TV networks will discredit the really good idea on free of charge TV time for productive meaningful debates for the Presidential candidates. Instead, on Paul Taylor scenario these 5-min. meaningless, by shortage of time, TV flat races will make Clinton and Dole like two clowns with funny circus short reprises between longer TV shows and commercials. It would be very funny if it was not so sad...

Therefore, I decided to inform you about another alternative for free from charge TV time for political direct appearance for the Presidential candidates on TV - this alternative in my letter to Chairman Reed Hundt (3 pages, May 24, 1996) and accompanied letter to Editor of The Washington Post (1 page, March 3, 1996) and paper "Is it really the good deal" (2 pages, March 3, 1996) as the reaction on The Washington Post editorial "Mr. Murdock's good deal".

I will appreciate to know you reaction on this matter.

Thanks for your time and consideration.

Sincerely and cordially,

Dmitry A. Novik